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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/541,837 | 07/12/2005 | Uno Henningsson | P16589 | 6125 |
| 27045 | 7590 | 07/27/2006 | EXAMINER | |
| ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024 | | | BOES, TERENCE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3682 | |

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/541,837 | | HENNINGSSON ET AL. | |
| | Examiner | | Art Unit | |
| | Terence Boes | | 3682 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/12/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed July 12 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specifically, it appears as if GB 0520420 has not been submitted.

US 2002/150335 as cited on the IDS appears to be a typo of --US 2002/0150335--. US 2002/0150335 is being submitted into the record via examiners cited references.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Referring to Figure 1, the examiner does not understand how the tuner (15) can translate into the resonator (16). The device appears to function similar to a ball screw, however, there is no apparent structure restricting the rotation of 15 thus

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allowing for translation of tuner (15). The tuner as shown in Figure 1 would rotate with motor (11), threaded axis (13), and first and second screw parts (141,142). How can the tuner translate through the resonator without structure restricting the tuners rotation?

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 13, the recitations "...a threaded axis..." renders the claim indefinite. An axis is the center of a part however no part has been referred to. How can an axis be threaded?

Claims 8,18, and 19 recite the limitations "first screw part" and "second screw part" in lines 2-3. There is insufficient antecedent basis for these limitations in the claim.

The term "low" in claims 12 and 24 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. What conductivity, or resistivity would be low enough to be considered as having low electric losses?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 8-11, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Newell (USP 3,169,407).

Newell discloses:

Re clm 1

- A chamber (8) for insertion of a threaded axis along which the screw arrangement (see figure 1) is movably arranged.
- A first resilient part (see fig 7, 42) to eliminate an axial allowance
- A second resilient part (51, bolt prevents flange 42 from moving radially relative to housing 41) to eliminate a radial allowance
- The screw chamber at its inside being equipped with semi-spheres (27) that follow the turn of the threads of the threaded axis (threaded axis is considered to be axis of shaft 1).

Re clm 2

- Screw arrangement consists of a first part (1) and a second part (2)

Re clm 3

- The first part can be inserted into the second part (see fig. 1)

Re clm 5

- Whereby the first resilient part comprises an integrated part of the first part of the screw (the parts are considered integrated in that they cooperate with each other and function together).

Re clm 8

- Whereby the first screw part comprises one or more convex protrusions (4,5,6) and the second screw part comprises corresponding grooves (9) for insertion of the first part into the second part.

Re clm 9

- Whereby six semi-spheres (see figs. 1 and 2, there are two rows of three semi-spheres) are arranged inside of the screw chamber of the first and second screw part which follow one turn of the threaded axis (the examiner notes the "turn" is interpreted as a verb, therefore the semi-spheres are considered as following one turn of the threaded axis.)

Re clm 10

- Whereby the semi-spheres comprise a cross section that minimizes the contacting surface between semi-sphere and the threaded surface of the axis (C6/L15-20)

Re clm 11

- A threaded means (35) for fastening of a tuner object (37, 37 is broadly interpreted as a tuner object as it is capable of adjusting or tuning the rotational frequency of the shaft)

5. Claims 1-11, 13 rejected under 35 U.S.C. 102(b) as being anticipated by Naoi et al. (US 3,987,680).

Naoi discloses:

Re clm 1,13

- A chamber (see fig. 1, chamber is contained within 15) for insertion of a threaded axis along which the screw arrangement (see figs. 1,4) is movably arranged.
- A first resilient part (25) to eliminate an axial allowance
- A second resilient part (29) to eliminate a radial allowance
- The screw chamber at its inside being equipped with semi-spheres (22a, 23a) that follow the turn of the threads of the threaded axis (threaded axis is considered to be axis of 21).

Re clm 2,14

- Screw arrangement consists of a first part (19) and a second part (15)

Re clm 3,15

- The first part can be inserted into the second part (see fig. 1)

Re clm 4,16

- Whereby the first resilient part comprises a separate spring (25).

Re clm 5,17

- Whereby the first resilient part comprises an integrated part of the first part of the screw (the parts are considered integrated in that they cooperate with each other and function together).

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Re clm 6,18

- Whereby the second resilient part comprises at least one resilient tongue (see gear tooth on 29) that is arranged in parallel to the screw axis for insertion into corresponding grooves (see groove in 15 containing 29) of the second screw part.

Re clm 7,19

- Whereby an end of the resilient tongue (see gear teeth of 29) is equipped with a bulge (bulge is considered as tip of gear teeth) to secure a firm connection of the first and second screw part (see fig 1. bulge biases 27 which biases shaft 11 securing first part 19 to second part 15)

Re clm 8,20

- Whereby the first screw part comprises one or more convex protrusions (19 is circular and therefore has convex protrusions, i.e. each quadrant contains a convex protrusion) and the second screw part comprises corresponding grooves (the internal corners of 15 are considered to be corresponding grooves) for insertion of the first part into the second part.

Re clm 9,21

- Whereby six semi-spheres (see fig 7, A, B, C, D, E, F) are arranged inside of the screw chamber of the first and second screw part which follow one turn of the threaded axis (the examiner notes the "turn" is interpreted as a verb, therefore the semi-spheres are considered as following one "turn" of the threaded axis.)

Re clm 10,22

- Whereby the semi-spheres comprise a cross section that minimizes the contacting surface between semi-sphere and the threaded surface of the axis (see fig. 5, semi-spheres contact flat surfaces 32a, 32b minimizing the contacting surface to essentially a contact point)

Re clm 11,23

- A threaded means (see fig. 5, screw fastening 16 to 15 is considered a threaded means for fastening of a tuner object) for fastening of a tuner object.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoi et al. (US 3,987,680) in view of Howie, Jr. (US 6,467,131).

Naoi discloses all of the claimed subject matter as described above. Naoi does not disclose a plastic material having properties including a sliding surface and low electric losses.

Howie, Jr. teaches a plastic material (see white nylon C1/L 45-50) having properties including a sliding surface and low electric losses for the purpose of ease of manufacturing by injection molding (C1/L 45-50).

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It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Naoi and provide a plastic material having properties including a sliding surface and low electric losses, as taught by Howie, Jr., for the purpose of ease of manufacturing by injection molding.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terence Boes whose telephone number is (571) 272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB

7/20/06


RICHARD RIDLEY
SUPERVISORY PATENT EXAMINER